CalNex Forecast Notes - Sunday, May 16, 2010

California Synoptic Overview - Dar Mims (dmims@arb.ca.gov)
Sunday May 16

- Trough axis moving onshore
- Increased onshore flow
- Coastal stratus more widespread

Monday May 17

- Trough axis moves in Monday
- Rain starts on the North Coast and spreads SE
- Precip confined mainly N of Pt Conception

Tuesday May 18

- Trough moves east into NV
- Transport and surface flow turns N/NW
- Ridge building late

Wednesday- Thursday May 19-20

- Weak Ridge builds in
- Large GOA Trough moves in Thurs
- Cooler, windy weather heading into weekend.

Anticipated Activities
WP-3D

Sun: southern SJV flight cancelled; cloud module flight offshore in AM, short LA Basin flight in pm
Mon: No Flight
Tue: No Flight
Wed: platforms comparison flights
Thu: No Flight
Fri: tentative Maersk vessel fuel switch
Sat: No Flight
note: evening & night flights begin May 23 for 10-14 days

NOAA Twin Otter

Wed: platforms comparison flights

NASA King Air

Sun: southern San Joaquin Valley
Wed: platforms comparison flights

R/V Atlantis

Sun: area between Pt. Conception and LaJolla - cloud module
Mon: area between Pt. Conception and LaJolla

Local Features:
Wednesday:
forecasters need to ID areas with clear skies for intercomparison of aircraft platform measurements

Large Scale Transport Notes - Brad Pierce (brad.pierce@noaa.gov))

LA/SF AIRNOW Site Comparison
Moderate O3/PM2.5 LA AQ during FX period
Good O3 Good/Moderate PM2.5 SF AQ during FX period
AIRNOW data missing since May 11, 2010

LA/SF AIRNOW Ensemble
Intermediate (24hr) LA transport route to south turning East during FX period. Stagnation over western AZ for ensemble ending Mon. Advection into UT for ensemble ending Tues/Wen
SF Ensemble shows predominately southward transport ending Mon Increased dispersion with transport to UT for ensembles ending Tues/Wen

500m RDF FX 00Z 05/17 (Sun Afternoon)
New Intercontinental CO enhancement moving in, LA and SF O3 P-L enhancment moving into NV at 500m
Elevated (10-15 ppbv/day) background O3 P-L NE and S of LA
O3 enhancement (>60ppbv) over Central CA
Some PM2.5 enhancement over Southern CA

500m RDF FX 00Z 05/18 (Mon Afternoon)
New Intercontinental CO/O3 enhancement offshore, advection of SF and LA O3 P-L enhancement into NV/UT at 500m
Moderate (5-10 ppbv/day) background O3 P-L NE of LA&SF
O3 enhancement (>60ppbv) advected into NV/UT
PM2.5 enhancement over South Eastern CA and NV/UT

500m RDF FX 00Z 05/19 (Tue Afternoon)
New Intercontinental CO enhancement offshore, advection of SF and LA O3 P-L into UT/WY at 500m
Weak (~5 ppbv/day) background O3 P-L around LA&SF
O3 enhancement (>60ppbv) advected into UT and WY
PM2.5 enhancement offshore

500m RDF FX 00Z 05/20 (Wen Afternoon)
First Intercontinental CO/PM2.5 enhancement coming onshore in Northern CA, second wave still offshore
Moderate (5-10 ppbv/day) background O3 P-L NE of LA&SF
O3 enhancement (>60ppbv) over central CA
PM2.5 enhancement offshore and over central CA

Area Forecast Details

San Francisco Bay Area - Danny Kam (dkam@airquality.org)
NO FORECAST TODAY

Sacramento Valley - Danny Kam (dkam@airquality.org)
NO FORECAST TODAY

San Joaquin Valley - Shawn Ferreria (Shawn.Ferreria@valleyair.org)
Sunday May 16
Surface Winds: The surface observations this morning show light NW winds in the northern and central SJV, with light SE flow in the southern SJV. No wind profiler data profiler data was available today. CANSAC shows a light NW flow across the SJV throughout the day, and increasing throughout the day. Inflow from the Delta and Pacheco Pass by 10:00. Winds this morning will be light in the southern SJV, strengthening from the north during the afternoon. Overnight winds will remain from the northwest, under increasing onshore flow conditions.

Air inflow into SJV via SLO, Pacheco, Altamont, Cottonwood, and Delta. Outflow toward the Desert.

Boundary Layer Mixing: The aircraft soundings from Fresno and Bakersfield were not available today. A morning inversion will cause mixing to be limited initially this morning. With afternoon heating, mixing should improve to 4,500 feet along the eastern portion of the SJV, and up to 2,500 feet on the western portion of the SJV.

Air Quality: Expected to be mostly in the low USG category for Kings, Fresno, Tulare, and Kern Counties. Moderate AQI is predicted elsewhere.

Monday May 17

Surface Winds: CANSAC shows a linitially light and variable wind flow present in the SJV during the morning hours. Strenghtening southeasterly flow will be present in the northern and central parts of the District, with northwesterly flow present in the south.

Boundary Layer Mixing: Mixing show steadily improve as the trough approaches. The typical stability will be present in the morning, breaking up by the late morning. Maximum mixing depths are predicted in Kern, Tulare and Fresno counties of 5,000 to 6,000 feet. Lower mixing depths are predicted over Stanislaus, San Joaquin counties between 1,000 to 1,500 feet. This later mixing depths is interesting to note.

Air Quality: The air quality should gradually improve as the trough approaches. With the increasing cloud cover, ozone should lower. Predicting moderate air quality for Tulare, Kings, and Kern Counties tomorrow.

Central Coast - Gary Arcemont (garcemont@co.slo.ca.us)
NO FORECAST TODAY

SoCal Coastal Waters - Lee Eddington (Lee.Eddington@navy.mil)
NO FORECAST TODAY

slides provided for:

- 0600PDT winds
- 0730 PDT satellite pics for NorCal and SoCal
- low level cloud and 1-m wind forecasts from COAMPS shown for Sun PM, Mon AM, and Mon PM

South Coast - Kevin Durkee (kdurkee@aqmd.gov)
NO FORECAST TODAY